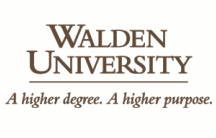

2019

Promoting Infant Safe Sleep Through Staff Education

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This is to certify that the doctoral study by

MaryAnn Crawford

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2019

Abstract

Promoting Infant Safe Sleep Through Staff Education

by

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Walden University, 2016

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

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Abstract

Sudden unexplained infant death (SUID) is a sudden death of an infant under 1 year of age that cannot be explained after an investigation or an autopsy. SUID is the leading cause of infant deaths in the United States; SUID is considered a sentinel event to the birth hospital. Birth hospitals are held accountable for education, training, and role modeling of infant safe sleep practices (SSP) to reduce infant sleep-related deaths up to 1 year of age. This educational project was designed to answer the project-focused question of whether the implementation of an evidence-based, safe sleep training program for nurses would improve their knowledge of SSP. Bandura's social cognitive theory and the root cause analysis theory were used to guide the project that provided education on SSP and methods for teaching SSP for 48 nurses who work in a postpartum unit in a large hospital in the northeastern United States. A search of the literature provided the content from the National Institute of Child Health and Human Development for the education program and served the basis for the 15-item multiple-choice test, which was used for the pretest, posttest design project. The test was administered to the nurse participants who ranged in education from associate degree, baccalaureate degree, to master's degrees. The project goal was to increase nurses' knowledge by training and role modeling infant safe sleep environments and to reduce SUIDs. Results of the pretest and posttest evaluation revealed significant improvement in test scores from a pretest $M = 72.9$ to a posttest $M = 90.0$ ($p < .05$). The implications of this project for social change are that each nurse's knowledge and abilities to teach parents and families about SUID prevention strategies improve, sudden infant deaths may decrease in this hospital setting.

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I would like to take this time to thank my husband for his understanding, care, support and assistance throughout my educational journey. He was so caring to make sure I would eat, get up and walk away from the computer to clear my mind, only to return refreshed back to my work and able to get the job done. I also would like to thank my five daughters, 10 grandchildren, and friends who have also supported me, and listened, as I babbled on about things they did not even understand. At this time, I would like to thank the faculty for their guidance and instruction throughout this long and arduous journey and getting me to where I needed to be.

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Section 1: Nature of the Project

Introduction

Sudden unexplained infant death (SUID) is defined as sudden death of an infant under 1 year of age which after an autopsy and death investigation cannot be explained (Centers for Disease Control and Prevention [CDC], 2018). SUID accounts for more than 4,000 deaths a year in the United States and is a leading cause of death among infants in the Maryland, due to unsafe sleeping environments and practices (CDC, 2017; Department of Health and Mental Hygiene [DHMH] n.d.; Moon Hauck & Colson, 2016). In the 5 years between 2011 and 2015, there were 268 cases of SUID in Maryland, 88% of which were determined to be sleep-related (DHMH, n.d.). The local hospital where I worked and where the doctor of nursing practice (DNP) project was implemented had a high rate of incidence of SUID cases between 2011 and 2017 which 49% occurred in the area served by the local facility with incidence continuing to grow (DHMH, n.d.; Maryland Vital Statistics Infant Mortality in Maryland,2017).

In 1992, the American Academy of Pediatrics released recommendations to place infants on their back to sleep, where SUID cases decreased by 50% (AAP, 2005). Despite the addition of several evidence-based sleep recommendations, sleep-related infant deaths have reached a plateau, and in some areas such as the area served by the local hospital, SUID increases have been noted (AAP, 2011; DHMH, n.d.; Colson et al., 2013; Maryland Vital Statistics Infant Mortality in Maryland,2017; Moon et al., 2016). Medical professionals, parents, and other caregivers are either uninformed or opposed to adopting the current recommendations leading to the present plateau or rise in the

number of sleep-related infant deaths. Presently, there are inconsistencies between hospitals and evidence-based educational safe sleep practice programs that are known to positively impact the outcome measures of SUID. Efforts by many states are now being used in legislation to target hospitals to mandate-consistent infant safe sleep education in all birth hospitals (Colson et al., 2013; Moon et al., 2016; Patton, Stiltner, Wright & Kautz, 2015; Shapiro et al., 2015). Additionally, nursing staff often neglect to follow the current AAP recommendations for providing a safe sleep environment in the hospital, indicating a nursing knowledge deficit and need for extra education regarding evidence-based, safe sleep practices and the supporting science of the present recommendations (Moon et al., 2016; Patton et al., 2015; Rholdon, 2017).

I focused my DNP project on educating postpartum nursing staff on the current, evidence-based, safe sleep practices (SSP), role model training and strategies to proficiently educate parents and care givers on these practices. Implementation of these evidence-based practices creates a probable break down in behavioral and social barriers, leading to improved safe sleep practices, and reduces the amount of sleep-related infant deaths (Moon et al., 2016; Rholdon, 2017). As a DNP student, my intent was to affect social change with the DNP project through staff education to reduce infant mortality thereby promoting and creating positive social change (Walden University, 2018).

Problem Statement

In the past 5 years, almost half of all SUID cases in the state have transpired in the region served by the hospital; thus, the clinical practice problem identified is of

critical significance to the facility and the population they serve (DHMH, n.d.). Also, birth hospitals are now being held accountable for education, training, and role modeling of infant safe sleep practices and the outcomes of infant sleep-related deaths for up to one year of age and are charged as a sentinel event to the birth hospital (Moon et al., Patton, et al., 2015). The problem is that no current infant safe sleep program exists for this facility. The DNP project showed an increase in knowledge for nursing staff by the implementation of an evidence-based education, role modeling and training program on infant SSP for parents and caregivers of newborn infants in decreasing SUID. Nursing significance of this project is in educating nurses to take a vital role in the reduction of infant mortality and the improvement of patient outcomes thereby reducing infant mortality through nursing education in the promotion of positive social change (Moon et al., 2016; Patton et al., 2015; Rholdon, 2017; Zacharitz, Fulmer, & Chaney, 2016).

Purpose Statement

The purpose of the DNP project was to focus on the gap-in-practice or a lack of nursing knowledge related to evidence-based, SSP for infants that contributes to this significant problem, specifically originating from the lack of an evidence-based, infant safe sleep educational program, and outdated practices being utilized by the nursing staff in the local hospital (Moon et al., 2016; Patton et al., 2015)The practice-focused question for the DNP project answered the following: Will an education program on safe sleep practices (SSP) increase nursing staff knowledge and ability to educate and model SSP occur after participation in an education program? Presently, no such education exists for the postpartum nursing staff in the local facility. Therefore, the purpose of the

project was the implementation of an evidence-based, safe sleep, training program to equip the nursing staff with the knowledge and tools to educate effectively and enable parents and caregivers to comply with the current, safe sleep recommendations, paramount to the reduction in sleep-related infant deaths (Patton et al., 2015; Rholdon, 2017).

Nature of the Doctoral Project

All aspects of the project were supported by my collection of current data from scholarly databases that support the population being served by the local hospital. This hospital has consistently experienced a high incidence of sleep-related infant deaths and continue to rise (DHMH, n.d.). According to the recent scholarly literature healthcare professionals caring for women who have infants should be offered training initially and with periodic updates. The staff training included current, evidence-based safe sleep principles that subsequently educate parents and caregivers, while also role modeling those principles in the hospital setting (DHMH, n.d.; Moon et al., 2016; Patton et al., 2015).

The nursing staff of the local facility currently were not exposed to such training opportunities and did not consistently demonstrate the ability to model safe sleep behaviors when caring for parents of infants; thus, the gap-in-practice largely contributing to the increased occurrence of sleep-related infant deaths in the local area may be a nursing knowledge deficit related to evidence-based SSP. The current, scholarly literature suggests that educating postpartum nursing staff on those evidence-

based principles, as well as strategies to effectively educate parents and caregivers, is essential to reducing sleep-related infant deaths (Moon et al., 2016; Patton et al., 2015). Bridging the gap in practice contributing to the clinical problem, I focused on providing an evidence-based staff education program to members of the postpartum staff in the hospital with the main goal of increasing staff knowledge with an approved and validated training course by the National Institute of Child Health and Human Development (NICHD). I assessed staff knowledge pre- and postintervention, attendees took a deidentified, pre- and posttest from the approved training course which I scored and analyzed the results of the impact of the program on staff knowledge. Attendees of the program also completed a deidentified evaluation at the end of the activity that analyzed the impact of the intervention on staff attitudes, beliefs, and willingness to change practice.

Significance

All stakeholders such as nursing staff, parents, other caregivers, leaders, nurse educators, social workers, case managers, physicians, hospital administration, and third-party payers were impacted by the educational program which increased knowledge. The education program empowered healthcare professionals to take an active role and assists in the breakdown of behavioral and social barriers that lead to improved safe sleep practices, and potentially improve patient outcomes and reduce infant mortality (Moon et al., 2016; Patton et al., 2015; Rholdon, 2017; Zacharitz, Fulmer, & Chaney, 2016). Rowe et al., 2015, founded that proposal projects on infant SSP can be easily

replicated in similar environments across the country and around the world, creating the potential to promote and create positive social change on a global scale.

Summary

In Section 1, I explained SUID as the leading cause of infant deaths locally and nationwide. SUID largely is caused by a gap in nursing practice due to a lack of knowledge about evidence-based, current infant SSP. An important first step in bridging the gap required all stakeholders involved with infant care to receive current evidence-based education and role model training on SSP. These practices empowered healthcare professionals to take an active role and assist in the breakdown of behavioral and social barriers that lead to improved safe sleep practices, improved patient outcomes, and a reduction of infant mortality that promotes positive social change. In the next section, I will describe the concepts, model, and theories that I used for the project, the relevance to nursing practice and local background, my role in the research and the role of the project team in relationship to the project.

Section 2: Background and Context

Introduction

SUID is the leading cause of infant death in Maryland with 4,000 deaths annually in the United States, and continues to grow, largely due to unsafe sleeping environments and practices (CDC, 2018; CFR, n.d.). Nursing staff, parents, and caregivers lack awareness, and are resistant to adopting recommendations for sleep-related infant deaths (AAP, 2016; Colson et al., 2013; Moon et al., 2016; Patton et al., 2015). The practice-focused question for the DNP project and purpose for this doctoral project was: Will an education program on SSP increase nursing staff knowledge on the ability to educate and model SSP that occur after participation in an education program?

Concepts, Models, and Theories

For this project, I used Bandura's social cognitive theory (SCT) (1986) to inform the doctoral project with a focus on how environment, cognitive factors, and behaviors of a person are influenced by their interactions with nursing staff, parents, and caregivers. SCT also conveys how these variables encompass and affect each other as in cultural and educational barriers to the adherence of safe sleep recommendations (Aitken, Rose, Mullins et al., 2016; Chu, Hackett, & Kaur, 2016; Matthews, Joyner, Oden, Alamo, & Moon, 2015; McEwen & Wills, 2014; Moon et al.2016). Another aspect of SCT is that behaviors are exhibited by people and are acquired through observational learning, imitation, and modeling, and with active involvement in the personal selection, intentionality, and self-regulation through the learning process in the environment (McEwen & Wills, 2014). A main purpose of the SCT was to understand

and predict individual and group behavior, identify specific methods that will adapt or refine behavior, and utilize tested interventions directed at personality growth, behavior pathology, and promotion of health (McEwen & Wills, 2014). The SCT is very serviceable with educational programs designed to change behavior as in implementing new knowledge into nursing practice with evidence-based SSP (McEwen & Wills, 2014; Moon et al.2016).

Relevance to Nursing Practice

Local and background evidence on the relevance of SUID presents many issues that justify the doctoral project focused question and why an evidence-based infant safe sleep education program implementation is warranted.

Sudden Unexpected Infant Deaths and Unsafe Sleeping Environments

In 1994 the "Back to Sleep Campaign" stated that prone sleeping led to a decrease in infant death rates both in the United States and worldwide. Annually, 4000 infant deaths are reported nationwide due to unsafe sleep environments. Currently, sleep-related infant death rates have plateaued and, in some areas, increased, which implies a need for improvement and adoption of an evidence-based infant safe sleep program in prevention of further infant deaths, especially in the inpatient hospital setting. Healthcare professionals of birth hospitals are responsible for much of the initial education of new mothers and caregivers in the prevention of SUID (AAP, 2016; CDC, 2018; CFR, n.d.; Goodstein, Lagon, Bell, & Krugman, 2015; Moon et al., 2016; Patton, et al.,2015; Rholdon, 2017). Empowering nurses with education and active roles in infant safe sleep practices improves patient outcomes and can potentially reduce infant

mortality and promote social change (Moon et al.,2016; Patton et al.,2015; Rholdon, 2017; Zacharitz et al., 2016).

Nursing Knowledge Deficit

Some healthcare professionals, parents, caregivers, and childcare providers lack the current knowledge from the AAP guidelines and may have multiple barriers that continue the resistance and acceptance of SSP recommendations. For instance, healthcare professionals and parents fear aspiration or diminished quality of sleep while supine, and cultural norms or family traditions such as bedsharing or blankets are in conflict with safe sleep guidelines and pose barriers to acceptance of current safe sleep practices (AAP, 2016; Moon et al.,2016; Chu, Hackett, &Kaur, 2015; Patton et al.,2015; Rholdon, 2017; Shapiro et al.2015; Schnitzer, Covington, & Dyskstra, 2012; Zacharitz et al., 2016).

Cultural Norms

There are many potential barriers that impede adherence to safe sleep recommendations such as cultural norms and family traditions. These issues include nursing staff, parents, and family beliefs that coincide with a plausible link between the current education on safe sleep practices, and sleep-related infant deaths, fear of aspiration due to infants sleeping on their back, bedsharing, separate sleeping spaces, use of blankets, and maternal smoking and alcohol use. All of these issues create conflict with safe sleep recommendations and pose difficult barriers to creating a safe infant sleep environment (Aitken et al., 2016; AAP, 2016; Gaydos, Blake, Gazmararian et al.,2015; Moon et al., 2016; Stiffler, Ayres, Fauvergue, & Cullen, 2017).

Current Nursing Recommendations

Some birth hospitals in Maryland consider any sleep-related infant death a sentinel event. A root cause analysis (RCA) is performed after each death, and a continuous quality improvement (QI) program through Plan-Do-Study-Act (PDSA) cycles are used to assist in achieving better outcomes. Nursing staff at birth hospitals are responsible for providing initial education to parents and caregivers on infant safe sleep environment. Current nursing recommendations support that all nursing staff should receive appropriate education and training on safe sleep practices to serve as role models to influence parent and caregiver sleep practices in the home (AAP, 2016; Mason, Ahlers-Schmidt, & Schunn, 2013; Moon et al.,2016; Patton et al.,2015; Rholdon, 2017; Rowe et al., 2015; Shapiro et al.2015; Zacharitz et al., 2016).

Local Background and Context

Annually there are 4,000 infant deaths in the United States that are largely caused by unsafe sleeping environments (CDC, 2018). There were 268 SUID cases noted in Maryland between 2011 and 2015, with a percentage occurring in the area that is served by the local facility (CFR, n.d.). Healthcare professionals who care for women and infants are responsible for educating parents and caregivers on the current evidence-based infant safe-sleep practices, while also role modeling the behaviors of safe sleep (CFR, n.d.; Moon et al., 2016; Patton et al., 2015). Presently, many nurses lack current knowledge on AAP guidelines on safe sleep environments, and or are still resistant to adopting current recommendations for SSP (AAP, 2016); Colson et al., 2013; Moon et al., 2016; Patton et al., 2015; Shapiro et al., 2015).

Strategies for nursing to address the gap-in-practice on SSP included increasing nursing staff knowledge on evidence-based, infant safe sleep practices, including how to model and educate parents and caregivers to facilitate adherence to these practices (Patton et al., 2015; Rholdon, 2017). Prior to this project the facility did not have such education available to the postpartum nursing unit. The doctoral project advanced nursing practice and filled in the gap-in-practice for this facility. Implementation of the evidence-based safe sleep training program has given the nursing staff current knowledge and tools to effectively educate, empower parents and caregivers to adhere to current safe sleep practices, leading to a decrease in SUID (Patton et al., 2015; Rholdon, 2017; Zacharitz et al., 2016).

Role of the DNP Student

The local facility where my DNP project was implemented is an acute care, inpatient facility. I work as a nursing shift supervisor for the facility and the DNP project facilitator who has participated in at least three SUID ER codes over the past 2 years, which has propelled the critical need for the project of education on infant safe sleep practices. In the past 5 years, nearly half of all SUID cases in the state have occurred in the area served by the facility; therefore, the identified clinical practice problem is of crucial significance to the organization and the population it serves (DHMH, n.d.). It will also serve as the action plan for the SUID sentinel event root cause analysis for the organization. (Moon, et al.,2016). The DNP project addressed the gap-in-practice contributing to this significant problem, largely originating from the lack of current practices utilized by the nursing staff in the local facility (Moon et al., 2016; Patton et

al., 2015). As an employee of the organization, I had sufficient access to the unit and staff to facilitate planning, development, and oversight of the proposed project with direct input from the staff and unit leadership. This was essential to gain the necessary buy-in from the nursing staff to facilitate the success of the proposed project (Kettner, Maroney, & Martin, 2017).

Role of the Project Team

The project team consisted of myself, as project leader, the preceptor/patient care manager of the inpatient unit, program staff members, and program participants. The team met to gain background information and to collaborate their input in a timely fashion and discussed the plan of implementation for the evidence-based educational program. In plan development Walden University (2017) founded that, a plan development and organizational verification with organizational leaders and main stakeholders for specific implementation timeframes is important. Therefore, I will develop a plan and obtain organizational verification with leaders and main stakeholders for a timeframe implementation.

Summary

In Section 2, for my doctoral project implementation of a safe sleep education program, I expanded on the framework that I used to guide the DNP project, and that was relevant to nursing practice, extended information on local background/context, and provided an expansion on my role as the DNP student and project team. I provided additional information on the connection to the gap-in-practice in section three.

Section 3: Collection and Analysis of Evidence

Introduction

Sleep-related infant deaths nationally and throughout Maryland are the leading cause of infant deaths due to unsafe sleep practices (CDC, n.d., CFR, n.d.; DHMH, n.d.). Nursing staff at birth hospitals are the initial contact for educating parents and caregivers of newborn infants and should have appropriate education and training on safe sleep practices.

The local facility currently lacked an evidence-based education and training program on safe sleep practices in the prevention of sleep-related infant deaths (AAP, 2016; Moon et al.,2016; Patton et al.,2015; Rholdon, 2017; Rowe, 2016; Zacharitz et al., 2016). The purpose of the DNP project was to effectively research evidence-based infant safe sleep practices and provide an implementation of an educational initiative for the nursing staff of the postpartum unit. Intended outcomes of the project were to increase nursing staff knowledge on evidence-based infant safe sleep practices that included how to role model and educate parents and caregivers to facilitate adherence to these such practices (Patton et al.,2015; Rholdon, 2017).

In this section, I address the strategy to achieve the project goal and propose how the practice-focused question was aligned with the project goal. Next is the description of evidence-based sources for the project, and a focused approved, previously developed, evidence-based educational program. The section also includes the planning, implementation, description of participants, procedures, protection, data collection, and

evaluation. The final portion of Section 3 includes a description of the analysis and synthesis of the data with the integrity of the process of analysis.

Practice-Focused Question

The DNP proposal project answered the following practice-focused question: Will an education program on SSP increase nursing staff knowledge on the ability to educate and model SSP after participation in an education program?

The practice focused question and purpose for the project is related to an increase of SUID within the 5-year timeframe between 2011 and 2015 with 268 cases of SUID in the state, to which 88% were determined sleep-related. The local hospital for my project implementation had a high rate of SUID incidence with 49% occurring in the area this facility serves (DHMH, n.d.). I participated in at least three of the ER codes of a SUID and felt that the community was in desperate need of education on SUID. Prior to the DNP Project, the facility lacked a current evidence-based infant safe sleep educational program. Therefore, the DNP project centered on educating the postpartum nursing staff on evidence-based, safe sleep practices, role model training and strategies to competently educate parents and caregivers on these practices in the reduction of SUID (Moon et al., 2016; Patton et al., 2015; Rholdon, 2017).

Sources of Evidence

The first source of evidence was from the current evidence-based published literature in summary throughout Sections 1 and 2 in the validation of this project proposal. The second source of evidence was the pre-approved and developed evidence-based infant safe sleep educational program designed by the National Institute of Child

Health and Human Development (NICHD). The NICHD educational program assisted in the education of the nursing staff in accomplishing the project task and awarded continuing education credits that are approved through the Maryland Nurses Association and the American Nurses Credentialing Center (NICHD, 2017). I utilized qualitative responses that were scored, and the results analyzed to assess the impact of the program on staff knowledge. Deidentified course evaluations were also completed by program attendees at the end of the activity that was analyzed to evaluate the impact of the interventions on attitudes, beliefs, and willingness of the staff to change their practices (AAP, 2016; Moon et al.,2016; Patton et al.,2015; Rholdon, 2017; Rowe, 2016; Zacharitz et al., 2016).

Planning

To bridge the gap in practice contributing to the identified clinical practice problem, I focused on providing evidence-based education to all nursing staff members of the postpartum unit in the local facility. The educational goal of the program was to increase nursing staff knowledge to the current, evidence-based, infant safe sleep practices. I used a prior formulated and developed, evidence-based, safe sleep education program for nursing staff and assessed pre-and post-test intervention. The program was developed by the NICHD and awards continuing education credits approved through the Maryland Nurses Association and the American Nurses Credentialing Center (NICHD, 2017). Also included in the course content was an evidence-based, institutional policy on SSP which was reviewed to facilitate staff awareness and understanding of the safe sleep policies for infants in the facility. Some of the policy expectations included for

staff was role modeling of evidence-based, safe sleep practices, guidelines for providing and documenting parental and caregiver education, and requirements for initial and periodic staff education.

Implementation

The DNP project implementation included multiple sessions of an approved evidence-based infant safe sleep mandatory education program, over a 1-week period. More than 50% of the licensed and unlicensed staff attended the mandatory training. Training was provided with a 90-minute, face-to-face education to staff using the prevalidated NIH online training course. Attendees reviewed and signed the "Consent Form for Anonymous Questionnaires" before taking pre-and postintervention assessments and postintervention survey. Assessment tools that were utilized for all attendees in the education program were pre-validated NIH pre-and post-participation knowledge assessments and post-participation survey tools.

Participants

All of the participants in the project were the nursing staff of the postpartum unit in the local facility, licensed and unlicensed, who were involved in providing clinical care to patients in the unit. Participants attended a mandatory 90-minute, face-to-face training course with dates that were assigned by the nursing manager on a variety of shifts within a 1-week period so all nursing staff would have the ability to attend. The number of nursing staff who care for all mothers and infants in the unit is estimated at 50 to 60 staff members' minus those who are out on medical leave of absence. Patton et al., (2015) and Rholdon (2017) founded the importance for all nursing staff members to

attend educational sessions. So, I added several sessions to arm the nursing staff with the knowledge and tools to effectively educate and empower parents and the caregivers with adherence to the current, safe sleep recommendations, assisting in the reduction of sleep-related infant deaths.

Procedures

The procedures of the proposal for the DNP project of promoting safe infant sleep through education began with obtaining a signed site agreement for permission of the project to be completed in the facility. A team for the assistance of the project included unit stakeholders. The project included multiple training sessions of approved evidence-based, safe sleep education for all licensed and unlicensed staff to attend over a one- week period. Attendees reviewed and signed a "Consent Form for Anonymous Questionnaires" before taking the pre-and post-interventions assessments and a post-participation survey. A 90-minute, face-to-face education to staff included the prevalidated NICHD online training with the pre-and posttest knowledge assessment tools and a post participation survey (NICHD, 2017; Walden, 2017).

Protections

I adhered to the standards outlined in the Walden DNP Staff Education Project Manual to diminish any potential risks to human subjects participating in the activity. I obtained written permission for the NICHD curriculum for the purpose of the project which was ascertained from the appropriate NICHD officials before the final approval of the project proposal by the DNP project committee. DNP projects adhering to the policies outlined in the DNP project manuals qualify for expedited review by the

Walden University Institutional Review Board (IRB); therefore, I sought such a review upon final approval of the project proposal from the project chair and committee member in TaskStream (Walden University, 2017). I used the site agreement located in Appendix A of the project manual and sought the required prior, written approval from the appropriate agency official at the site of the DNP project, before the project was implemented. My DNP project was implemented after the final approval of the DNP project committee, and Walden University IRB was received.

A consent form for anonymous questionnaires was administered and signed by each nursing staff member before participation. Staff knowledge levels, attitudes, beliefs, and willingness to change practice required an assessment of pre- and post-interventions. Anonymous assessment was achieved by using deidentified pre- and posttests and deidentified post participation course evaluation; therefore, no identifying information was gathered for this project. Further, per Walden (2017) education manual the identity of the local facility was referred to in general terms to protect its identity in all assignments and any potential publications related to the proposed project pre- and postimplementation.

Evaluation

My DNP project evaluated the impact of the staff education and training, with the pre-and post-test scores. An analysis of the post-participation survey assessed the impact of the educational initiative on knowledge levels and assists in the reduction of

sleep-related infant deaths (AAP, 2016; Moon et al.,2016; Patton et al.,2015; Rholdon, 2017; Rowe, 2016; Zacharitz et al., 2016).

Analysis and Synthesis

All blind survey questions were summarized per pre-and post-interventions. I used an SPSS analysis tool. Every continuous variable, including the Likert scale results, were summarized employing a mean and standard deviation, while all categorical factors were summarized using frequencies and percentages. The staff survey with all Likert scale results were in comparison between pre- and post-interventions using a two-sample t-test owed to the population and the likelihood of detecting a notable difference in the mean scores between the two groups. Rowe et al. (2015) founded that outcomes should be presented as a difference in proportions and 95% confidence intervals (CI) and documented in tables to show findings. I presented my outcomes as a difference in proportions and 95% confidence intervals (CI) and documented my outcomes in tables to show findings.

Summary

Section 3 included the doctoral proposal plan for collecting and analyzing the evidence with a clear identification for sources of the evidence, appropriate step-by-step description of how the evidence was collected, attention to the specific participants, how the data was measured, and ethical protection of the participants. In Section 4, I will report the findings, strengths, and implications that resulted from the analysis and synthesis along with recommended solutions to address the gap-in-practice.

Section 4: Findings and Recommendations

Introduction

SUID is a major cause of infant deaths in Maryland, and 4,000 deaths occur yearly in the United States, the number of which grows larger due to unsafe sleeping environments and practices (CDC, 2018; CFR, n.d.). The local hospital postpartum unit's nursing staff, parents, and caregivers lacked awareness and standardized education and were resistant to adopting recommendations for sleep-related infant deaths (AAP, 2016; Colson et al., 2013; Moon et al., 2016; Patton et al., 2015). Prior to the DNP project, the hospital lacked an educational program on infant SSP. My goal for the DNP project and purpose was to answer the question: Will an education program on infant SSP increase nursing staff knowledge on the ability to educate and model SSP occur after participation in an education program?

The DNP project utilized current evidence-based recommendations from the AAP (2016) current guidelines to increase nursing staff's knowledge. Moon et al., (2016); Patton et al., (2015); Rholdon, (2017); Zacharitz, Fulmer, & Chaney (2016) claimed the nursing staff plays a vital role in educating and modeling infant SSP in the reduction of infant mortality and the improvement of patient outcomes through an infant safe sleep nursing educational program.

I used an interventional-based approach for the DNP project for the inpatient hospital of the postpartum unit. Staff began by taking a quiz of 15 questions to assess present knowledge on infant safe sleep education. They then received a 90-minute face-to-face pre-validated NICHD online educational training on an infant safe sleep program

(NICHD, 2017; Walden, 2017). Immediately following the video, nursing staff members took a posttest that was used to evaluate their gained knowledge after the educational intervention. After the posttest, a post participation survey was completed by all staff to assess the impact of the educational initiative on knowledge levels that would assist in the potential reduction of sleep-related infant deaths (AAP, 2016; Moon et al.,2016; Patton et al.,2015; Rholdon, 2017; Rowe, 2016; Zacharitz et al., 2016).

Section 4 includes the findings and recommendations made from data analysis on the study of the promotion on infant safe sleep practices through staff education. The section will start by discussing the findings of this study and the implications of these findings. It will be followed by the presentation of the key recommendations of the study. In Section 4 I will end by discussing the strengths and the limitations of the study.

Results and Implications

Nursing staff are now being called on to base their clinical practices on sound evidence with their actions and efficacious decisions and to adopt evidence-based practice (EBP).In an EBP culture nurses are increasingly expected to understand and critique research evidence and to base specific clinical actions on evidence that indicates the actions are appropriate, cost effective, efficacious and improve patient outcomes (Polit, 2010). By fostering infant safe sleep education per the findings and implications on this research educational project the nursing staff can begin to close the gap between research and improved clinical practice. The educational intervention was an effort to investigate the data and comparison of a two-sample *t*-test that was the analytic option that answered the practice focused hypothesis that an education program on infant SSP

does increase nursing staff's knowledge on the ability to educate and model SSP after participation in an education program. In 2010, Polit founded that research findings and implications proved effective in the utilization of the infant safe sleep educational program for the improvement of infant mortality outcomes by raw data from the Women and Infant, Neonatal Care Unit initiative's database.

This section is based on raw data obtained from *Women and Infant NCU Education Initiative's* database. This raw data consisted of the scores on a pretest and posttest administered to a target sample or participants, which included nursing staff (see Tables 1 below and TableB1 in the Appendix B holding the following qualifications: Care associate (CA), registered nurse with an associate degree (RN AD), bachelor of science in nursing (RN BSN), and registered nurse with a master's of science in nursing degree (RN MSN). These tests were designed to ascertain whether participation in a nursing program on SSP would enhance the participants' skills and ability in effectively educating parents and caregivers on infant SSP. The pretest showed the participants' score before receiving the training in the nursing program on SSP and the posttest showed their score after receiving the training. The results of these scores analysis used the paired sample *t*-test (at $\alpha = 0.05$) for the differences between mean, which tested the hypothesis that claims that the mean difference between the two set of observations is less than zero: the participants' (that is, the nursing staff's) skills and abilities in effectively educating parents and caregivers on infant SSP improved after participating in the program. It should be noted here that each mean difference is given by: d = (Pretest score) – (Posttest score) whereby a negative difference indicates that the

program enhances the participants' skills and abilities, since the post-test score will be higher if that is the case (which will then produce a negative score difference). A Cohen's d test was performed which showed an analysis of Cohen's d= 1.493 Effect size (r) = -.598 medium effect size which is an appropriate effect size for the comparison between the two means.

Table 1

Target Sample or Participants

Academic Qualification	# of Nurses	Percentage (%)
CA-1	8	16.67
RN AD-2	17	35.42
RN BSN-3	21	43.75
RN MSN-4	2	4.17
Total	48	100.00

The results of the paired sample *t*-test for the difference between means analysis done using the Statistical Package for the Social Sciences (SPSS) are presented in TBA 1 through TBF 2 shown in the appendix section and, as was noted earlier, covered participants (nursing staff) with the following qualifications: CA, RN AD, RN BSN, and

RN MSN. It is worth bearing in mind that these results also include confidence intervals and correlation coefficient statistics.

According to TB 1 (see Appendix B), which showed a summary of the scores on the pretest and the posttest for all 48 participants, there is a difference in the nursing staff ‘s scores before participating in the nursing program on SSP and after participating in the program. The mean score after participating in the program increased from M = 72.8750 to 89.9583($p < .05$). This improvement in their score reflected the results shown on TB 2, which contains the summarized results for paired sample *t*-test for the difference between means, and the paired sample confidence intervals. In addition to this, the paired *t*-test result (*p*-value = 0.000; t = -8.693; shown in Appendix B, TB2 revealed that there is sufficient evidence to support the claim that the mean difference between the two sets of observations is less than zero, which means that the participants’ (that is, the nursing staff) skills and abilities in effectively educating parents and caregivers on infant SSP improved after participating in the program. This fact was further validated by the confidence interval for the difference of means, which are negative values (lower = -21.03657; upper = -13.13009), implying that a 95 percent confident mean difference between the two set of observations is less than zero, that is between -21.03657 to -13.13009.

Having discussed the results obtained from data analysis for the 48 participants in all the categories above (CA, RN AD, RN BSN, RN MSN), I will now turn my attention to the results obtained for each specific category. Tables TBC 1 through 2 (see Appendix C) showed that the CA’s according TBC1 scores were higher after

participating in the program. In quantitative terms, their average score after participating in the program increased from 60.8750 to 86.5000 (pretest= 60.8750; posttest = 86.5000). This higher posttest score is in line with the results shown on tables TB C1 through 2, which contained the summarized results for paired the sample *t*-test for the difference between means, and the paired sample confidence intervals. In addition to this, the paired *t*-test result (*P*-value = 0.001; t = -5.348) shown in TBC2 (see Appendix C) revealed that there is sufficient evidence to support the claim that the mean difference between the two set of observations is less than zero, which again implies that the participants' (that is, the CA's) skills and abilities in effectively educating patients or nursing mothers on infant SSP improved after participating in the program. The negative results from the confidence interval statistic further confirmed this, indicating that one can say with 95 percent confidence that the mean difference between the two set of observations is less than zero that is between -36.95598 and -14.29402.

Some similar test results for the holders of RN AD, RN BSN, and RN MSN, all of which indicated that participation in the training program enhanced the participants' skills and abilities to effectively educate parents and caregivers on infant SSP. The results for RN AD are as follows (see TBD 1 through 2 in Appendix D): the means scores in the pretest and posttest are respectively 76.2353 and 90.1765, the *p*-value for the correlation coefficient is 0.577, the *t*-statistic and the *p*-value for the *t*-statistic are -5.296 and 0.000 respectively, and the 95 percent confidence interval for the difference of means lie between -19.52178 and -8.36058. The analysis results for RN BSN are summarized thus (see TB E1 through 2 in Appendix E): the means scores in the pretest

and posttest are respectively 75.0000 and 90.4762, the *p*-value for the correlation coefficient is 0.871, the *t*-statistic and the *p*-value for the *t*-statistic are -4.698 and 0.000 respectively, and the 95 percent confidence interval for the difference of means lie between -22.34740 and -8.60499. Finally, for the RN MSN the results shown on TB F1 through 2 (Appendix F) revealed the means scores of 70.0000 and 96.5000 in the pretest and posttest are respectively. The results from these tables also revealed a *p*-value of 0.000 for the correlation coefficient, *t*-statistic and the *p*-value for the t-statistic are -53.000 and 0.012 respectively, and the 95 percent confidence values of -32.85310 and -20.14690.

The implications of the above results are very clear. First, data analysis has confirmed that the training program will equip the participants with the academic knowledge and clinical skills to effectively educate parents and caregivers on infant SSP. Second, by training the nurses via this program, the high incidence of SUID will significantly decline in the long run. In plain terms, this means that a nursing training program of this form will prepare the nurses to effectively teach parents and caregivers how to follow and apply current tried and tested safe sleep practices on their infants so as to protect them from sleep-related infant deaths.

Recommendations

The project intervention demonstrated that an approved evidence-based educational program on infant SSP was beneficial for the nursing staff of a postpartum unit. The multiple components, including viewing a PowerPoint, approved booklets from the NICHD, and real-life video portrayals can help to improve educational uptake

of infant safe sleep messaging. A variety of venues such as face-to-face group education and one-to-one interventions for delivering the interventions may also be helpful

Based on the findings of this project, a standardized educational infant safe sleep program would be beneficial for organizations to assist in the training, role modeling, and increasing knowledge for nursing staff, parents, and caregivers in the reduction of sleep-related infant deaths (AAP, 2016; DHMH, n.d.; Moon et al., 2016; Patton et al., 2015; Rholdon, 2017). The infant safe sleep intervention was low cost and therefore cost-effective for the education and training of staff caring for newborn infants, parents and caregivers in the reduction of SUID (Ward & Balfour, 2016). My project's focus was to ascertain how to continue to provide current and more effective training for both the current trainers and the nursing staff and those in the future.

Strengths and Limitations of the Project

The project derived its strengths from two sources. The first one is that the findings of this study can be generalized to the entire population of nursing staff, because the sample is representative of the nursing staff (because data was obtained from nursing staff who are practitioners in the field) including CA's, RN AD's, RN BSN's, and RN MSN's. The fact that the nursing staff have direct contact with parents who have newborn infants provides a better position to translate the education and role model training recommendations made by this study into actions that will produce positive results in terms of reducing the occurrence of SUID.

The second strength was that data analysis was rigorous, involving the use of paired-sample *t*-test for means difference. This means that the study results are, to a

reasonable extent, reliable. The main limitation is that I was compelled, due to economic reasons and time constraint, to limit the sampling size to pretest and posttest scores of only 48 nurses, a factor that might reduce the statistical power of the test conducted in the study. Ward & Balfour (2016) also discusses a limitation that is the self-reporting behaviors that limit the measuring of adherence to safe sleep recommendations and the ability to keep current with evidence-based infant safe sleep practice recommendations from the AAP for the staff, parents, and caregivers.

Section 5: Dissemination Plan

In section 5 I will review the plan for dissemination of the study's results to appropriate professional venues and the institution. The section will include a self-reflective analysis in my role as a practitioner and scholar drawing a connection between the conducted study experience, present state, and long-term personal professional goals. I will conclude with a summary of the project, with a synopsis of the project goal, how it was orchestrated, and study results.

Dissemination Plan

Patton et al., (2015) and Rholdon, 2(017), addressed the issues of whether promoting infant safe sleep through a staff education program similar to my DNP project would equip the nursing staff with increased knowledge. Also, if tools to effectively educate and enable parents and caregivers to comply with the current safe sleep recommendations are paramount to the reduction in sleep-related infant deaths. In consideration of the reports of increase infant deaths within the hospital community, the project became significant as an action plan for the institution and importance to the nursing staff's gap-in-practice and in the reduction of sleep-related infant deaths in the community (AAP, 2016; DHMH, n.d.; Moon et al., 2016; Patton et al., 2015; Rholdon, 2017). The impact of such an educational program empowers healthcare professionals to take an active educational role to assist in the breakdown of behavioral and social barriers. The education of nursing staff on infant SSP proves to increase nursing staff's knowledge and role modeling which leads their ability to teach parents and care givers on the adherence to these practices. These outcomes will provide a benefit to the

community the organization serves by assisting in adherence to infant SSP in the home and decreasing infant mortality rates as considered in their action plan for 2019 (Moon et al., 2016; Patton et al., 2015; Rholdon, 2017; Zacharitz, Fulmer, & Chaney, 2016). I will present the leadership with a written executive summary of the results of the study along with the materials to utilize and to consider for annual current competencies. Rowe et al., (2015) founded that suitable dissemination of the project would be beneficial to all nursing staff caring for parents and caregivers of newborn infants, and easily replicated in similar environments across the country and around the world, creating a potential to promote positive social change on a global scale. To reach a broader audience dissemination of the findings would be beneficial online and in journals such as American Academy of Pediatric Publications, Maternal and Child Health Journal, Pediatric Nursing Journals, the Journal of Pediatric Health Care, The Association of Women's Health, Obstetrics and Neonatal Nurses (AWHONN), and the American College of Obstetricians and Gynecologists (ACOG) to mention just a few.

The most important audiences to benefit from this report are hospital nursing staff with postpartum and neonatal care units who are caring for parents and caregivers of newborn infants. This is especially true of hospitals without current AAP (2016) mandated standardized infant safe sleep policies or current education and role modeling of infant safe sleep practices (Moon et al., 2016; Patton et al., 2015; Rholdon, 2017; Zacharitz, Fulmer, & Chaney, 2016).

Analysis of Self

I have always stated that I did not choose this project, and that the project chose me. I say this because of the many infant codes that I participated in during 2016–2017 as a night shift nursing supervisor in the emergency room. It was not until I had to place the lifeless infant in the arms of yet another mother, that my passion grew even stronger for this cause. Fate or not, I felt that something in our community was missing. I felt that this was my opportunity to take action and assist in decreasing the number of sleep-related infant deaths occurring in this community.

I began to research the organization's education of staff, parents, and caregivers on infant safe sleep and infant safe sleep environments in the reduction of SUID (Rholodon, 2017). To my surprise I had discovered that the hospital did not have a standardized infant safe sleep policy or a standardized educational program for the nursing staff on infant safe sleep practices related to SUID (AAP, 2016; Moon et al.,2016; Patton et al.,2015; Rholdon, 2017; Rowe, 2016; Zacharitz et al., 2016). I spoke with the patient care manager of the Women and Infant, Neonatal Care Unit who had expressed the need to develop a standardized infant safe sleep policy and an educational program on infant SSP for the nursing staff. A standardized educational program was needed to educate the nursing staff, parents and caregivers of newborn infants. It was then decided by the organization that the project would fulfill the need for an action plan for the organization in the reduction of infant mortality rates in the community (AAP, 2011; DHMH, n.d.; Colson et al., 2013; Maryland Vital Statistics Infant Mortality in Maryland,2017; Moon et al., 2016).

One of the first tasks I began for this project was to conduct literature reviews on infant safe sleep practices and to investigate some of the hospital approaches utilized to address these issues. I realized that the research was plentiful and that I would have to begin to downsize or develop a hypothesis or question that would be of vital importance and beneficial to the organization's needs. The literature review activity strengthened my knowledge and afforded me a conceptual framework to define the project of study. I was assisted in the determination of the project by my preceptor who is the patient care manager of the Women and Infant, and Neonatal Care Unit. The project was then determined as the action plan for the organization's response to the City and County Child Fatality Review (CFR)Team and the Fetal Infant Mortality Review Team community plan (DHMD, n.d.).

The first course of project coordination was with the hospital administrators and leaders for the approval in the development of a standardized educational program for all nursing staff on the postpartum and neonatal care units. Next, coordination ensued with the patient care manager/preceptor to decide the interventions of the program which would be an approved program from NICHD. Once the NICHD educational program was approved a decision was made on how to present the intervention to the staff. Because there are many staff members on two shifts it was necessary to present the educational program on multiple days and times to allow for all nursing staff to attend. As the project lead, I negotiated and managed rooms for the education and had to learn the technology of each room for the presentation, which afforded me much needed knowledge in IT. In the project lead role, I was provided with opportunities to exercise

almost all the Essentials of the Doctoral Education for Advanced Nursing Practice especially gaining much practice in Essentials II, III, IV, VI (AACN, 2006). The experiences that I have gained as a project manager include an ability to encourage interprofessional collaboration and teamwork, being a more effective communicator, and leadership in clinical decision making. Other learning experiences is an improved ability to utilize clinical scholarship with analytical methods in the implementation of safe, quality improvement in the administration of patient care, and to lead change in the quality of healthcare delivery all of which will prepare me with great life DNP experiences for future challenges (AACN, 2006).

Some of the challenges during the project included that 2 weeks were set aside for the completion of the project. The first week had to be aborted due to prolonged previous educational classes. Finally, the second week sign up was posted without an even distribution of staff members on certain days leaving a presentation for sometimes only four to seven people in one presentation. However, in the last days of the intervention many staff members presented without signing up. I had to adapt with the extra educational packets previously made in anticipation of this outcome. Some insights that I have gained in an educational mandatory intervention, one must allow for an influx of late staff members due to life situations.

Summary

SUID is a major worldwide concern with 4,000 infant deaths occurring annually in the United States and plateauing due to unsafe sleeping environments and practices (CDC, 2018; DHMD, n.d.). The local hospital where I implemented the DNP project

had a high rate of SUID incidences with 49% occurring in the community it serves (DHMH, n.d.). The DNP project centered on an educational intervention for the postpartum nursing staff on an evidence-based safe sleep practices, role modeling and strategies to competently educate parents and caregivers on these practices in the reduction of SUID (Moon et al., 2016; Patton et al., 2015; Rholdon, 2017). My DNP project investigated the effectiveness of the development of a standardized educational intervention on infant safe sleep practices among the nursing staff of a postpartum unit. There were 48 participants, CAs, RN ADs, RN BSNs, RN MSNs who took a knowledge baseline pretest and participated in a 90-minute face-to-face NICHD approved educational presentation on infant safe sleep in the reduction of SUID. A posttest was taken immediately following the presentation with a survey evaluating the educational program. I completed a post-analysis statistic with a paired-sample *t*-tests that demonstrated that the changes of participants scores were significant.

At the start of the intervention there was an important difference between the knowledge of the groups. The intervention has appeared to increase the knowledge of all disciplines and most importantly the RN MSNs who scored the lowest and post intervention had the highest knowledge on the subject. Overall, this program was successful in significantly improving the knowledge of every discipline and demonstrates that professionally developed educational programs have the ability to improve clinical practices for the nursing staff.

In the nursing profession and by the American Nurses Association Code of Ethics, which manifests that as nursing professionals, nurses are committed to promoting

health, welfare, and safety of all people. All people should include the smallest and most vulnerable newborn infant patients (ANA, 2001; Patton et al., 2015).

References

Aitken, M.E., Rose, A., Mullins, H.S., Miller, B.K., Nick, T., Rettiganti, M., Nabaweesi, R., & Whiteside-Mansell, L. (2016). Grandmothers beliefs and practices in infant Safe sleep. Maternal Child Health Journal, *20*(7), 1464-1471. DOI: 10.1007/s10995-016-1945-9

American Academy of Pediatrics, Task Force on Sudden Infant Death Syndrome. (2011). Technical report-SIDS and other sleep-related infant deaths: Expansion of recommendations for a safe infant sleeping environment. *Pediatrics, 129*(5), e1341-e1367. Retrieved from http://www.sbp.com.br/fileadmin/user_upload/pdfs/51-SIDS-Other-Sleep-Related-Infant-Deaths.pdf

American Academy of Pediatrics, Task Force on Sudden Infant Death Syndrome. (2005). The changing concept of sudden infant death syndrome: Diagnostic coding shifts, controversies regarding the sleeping environment, and new variables to consider in reducing. *Pediatrics, 116*(5), 1245-1255. Retrieved from http://www.heartswaddle.com/wp-content/uploads/2014/08/AAP-Guidelines.pdf

American Academy of Pediatrics, Task Force on Sudden Infant Death Syndrome. (2016). SIDS and other sleep-related infant deaths: Updated 2016 recommendations for a safe infant sleeping environment. *Pediatrics, 138(*5)1-12. doi: 10.1542/peds.2016-2938.

American Nurses Association (ANA), (2001). *Code of Ethics for Nurses with Interpretive Statements.* Retrieved from http://www.nursingworld.org/provision-8.

Centers for Disease Control and Prevention. (2017, November 28). *Infant deaths: Linked birth/infant records*. Retrieved from https://wonder.cdc.gov/lbd.html

Centers for Disease Control and Prevention. (2018, January 05). *Sudden unexpected infant death and sudden infant death syndrome.* Retrieved from https://www.cdc.gov/sids/aboutsuidandsids.htm

Chu, T., Hackett, M., & Kaur, N. (2015). Exploring caregiver behavior and knowledge about unsafe surfaces in infant injury death cases. *Health Education & Behavior, 42(3),*293-301. DOI: 10.1177/1090198114547817.

Colson, E.R., Willinger, M., Rybin, D., Heeren, T., Smith, L.A., Lister, G., & Corwin, M.J. (2013). Trends and factors associated with infant bed sharing, 1993-2010: The national infant sleep position study. *JAMA Pediatrics, 167*(11), 1032-1037. doi:10.1001/jamapediatrics.2013.2560.

Department of Health and Mental Hygiene. (n.d.). Maryland state child fatality review team – 2016 annual legislative report. Retrieved from https://phpa.dhmh.health.maryland.gov/mch/pages/cfr_reports.aspx

Goodstein, M.H., Lagon, E., Bell, T., & Krugman, S.D. (2015). Improving infant sleep safe through comprehensive hospital-based program. *Clinical Pediatrics, 54*(3), 212-221. doi:10.1177/0009922814566928

Gados, L.M., Blake, S.C., Gazmararian, J.A., Woodruff, W., Thompson, W.W., & Dalmida, S.G. (2015). Revisiting safe sleep recommendations for Afro-American infants: Why current counseling is insufficient. *Maternal and Child Health Journal,*19(3), 496-503. DOI: 10.1007/s10995-014-1530-z.

Kettner, P. M., Moroney, R. M., & Martin, L. L. (2017). *Designing and managing*

programs: An effectiveness-based approach (5th ed.). Thousand Oaks, CA: Sage.

Mason, B., Ahlers-Schmidt, C. R., & Schunn, C. (2013). Improving safe sleep environments for well newborns in the hospital setting. *Clinical Pediatrics, 52*(10), 969-975. doi:10.1177/0009922813495954.

Matthews, A., Oden, R., Joyner, B., McCarter, R., & Moon, R.Y. (2016). Differences in African American maternal self-efficacy regarding practices impacting risk for sudden infant death. *Journal of Community Health, 41*(2), 244-249. DOI: 10.1007/s10900-015-0088-z

McEwen, M., & Wills, E. M. (2014). *Theoretical Basis for Nursing* (4TH ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

Moon, R. Y., Hauck, F. R., & Colson, E. R. (2016). Safe infant sleep interventions: What is the evidence for successful behavior change? *Current Pediatric Reviews, 12*(1), 67-75. doi:10.2174/1573396311666151026110148.

National Institute of Child Health and Human Development (NICHD). (2017). Safe to Sleep. Retrieved fromhttp://safetosleep.nichd.nih.gov

Patton, C., Stiltner, D., Wright, K. B., & Kautz, D. D. (2015). Do nurses provide a safe sleep environment for infants in the hospital setting? *Advances in Neonatal Care, 15*(1), 8-22. doi:10.1097/ANC.0000000000000145

Polit, D. F. (2010). *Statistics and Data Analysis for Nursing Research* (2nd ed.). Upper saddle River, New Jersey: Pearson Education Inc.

Rholdon, R.D. (2017). Outcomes of a quality improvement project: An implementation of inpatient infant safe sleep practices. *Pediatric Nursing*, *43*(5), 229-232. doi: 10.1107/s0108768107031758/bs5044sup1.cif

Rowe, A. D., Sisterhen, L. L., Mallard, E., Borecky, B., Schmid, B., Rettigani, M., & Luo, C. (2015). Integrating safe sleep practices into a pediatric hospital: Outcomes of a quality improvement project. *Journal of Pediatric Nursing, 31*, e141-e147. doi: 10.1016/j.pedn.2015.10.015

Schnitzer, J. G., Covington, T.M., & Dykstra, H.K. (2012). Sudden infant deaths: Sleep environment and circumstances. *American Journal of Public Health, 102(*6), 1204-1212. DOI: 10.2105/AJPH.2011.300613.

Shapiro-Mendoza, C. K., Colson, E. R., Willinger, M., Rybin, D.V., Camperlengo, L., & Corwin, M.J. (2015). Trends in infant bedding use: National infant sleep position study 1993-2010. *Pediatrics, 135*(1)*,* 10-17. doi:10.1542/peds.2014-1793

Stiffler, D., Ayers, B., Fauvergue, C., & Cullen, D. (2017). Sudden infant death and sleep practices in the black community. *Journal of Specialists in Pediatric Nursing,* 23(2), 1-9. DOI: 10.1111/jspn12213.

Walden University. (2017). *Manual for staff education project: Doctor of nursing practice (DNP) scholarly project*. Retrieved from https://academicguides.waldenu.edu/ld.php?content_id=32804379

Walden University. (2018). *Who we are*? Retrieved from https://www.waldenu.edu/about/who-we-are

Ward, T.C.S., & Balfour, G.M. (2016). Infant safe sleep interventions, 1990-2015: A review. *Journal of Community Health, 41,* 180-196.DOI: 10.1007/s10900-015-

0060-y.

Zacharitz, W., Fulmer, M., & Chaney, N. (2016). An evidence-base infant safe sleep program to reduce sudden unexplained infant deaths. *American Journal of Nursing, 116*(11), 48-55. doi: 10.1097/01.naj.0000505590. 78202.a2

Appendix A: Women and Infants, NCU Education Initiative Raw Data

Serial	Participant	Discipline	Pretest	Posttest
1	1.00	1.00	20.00	53.00
2	2.00	1.00	67.00	93.00
3	3.00	1.00	47.00	87.00
4	4.00	1.00	53.00	93.00
5	5.00	1.00	87.00	93.00
6	6.00	1.00	67.00	100.00
7	7.00	1.00	73.00	93.00
8	8.00	1.00	73.00	80.00
9	9.00	2.00	80.00	87.00
10	10.00	2.00	80.00	80.00
11	11.00	2.00	73.00	93.00
12	12.00	2.00	76.00	87.00
13	13.00	2.00	60.00	87.00
14	14.00	2.00	67.00	100.00
15	15.00	2.00	87.00	100.00
16	16.00	2.00	73.00	100.00
17	17.00	2.00	73.00	93.00
18	18.00	2.00	67.00	87.00
19	19.00	2.00	87.00	93.00
20	20.00	2.00	80.00	100.00
21	21.00	2.00	80.00	80.00
22	22.00	2.00	80.00	93.00
23	23.00	2.00	73.00	80.00
24	24.00	2.00	80.00	100.00
25	25.00	2.00	80.00	73.00
26	26.00	3.00	80.00	87.00
27	27.00	3.00	87.00	73.00
28	28.00	3.00	93.00	100.00
29	29.00	3.00	80.00	87.00
30	30.00	3.00	87.00	93.00
31	31.00	3.00	60.00	87.00
32	32.00	3.00	60.00	87.00
33	33.00	3.00	67.00	87.00
34	34.00	3.00	67.00	93.00
35	35.00	3.00	67.00	100.00
36	36.00	3.00	73.00	100.00
37	37.00	3.00	67.00	93.00
38	38.00	3.00	73.00	100.00
39	39.00	3.00	87.00	87.00
40	40.00	3.00	73.00	87.00
41	41.00	3.00	67.00	80.00
42	42.00	3.00	87.00	93.00

43	43.00	3.00	47.00	93.00
44	44.00	3.00	73.00	100.00
45	45.00	3.00	93.00	80.00
46	46.00	4.00	67.00	93.00
47	47.00	4.00	73.00	100.00
48	48.00	3.00	87.00	93.00

Cohen’s d=1.493 Effect size (r)=.598 medium effect size

Appendix B: Paired Sample Statistics for the Combined Categories

Table B1

	Mean	N	Standard Deviation	Standard Error Mean
Pair 1				
Score Before Training	72.8750	48	13.24503	1.91176
Score After Training	89.9583	48	9.21368	1.32988

Source: Field Study, 2018

Table B2

Paired Sample t-Test: Summary of Output Results for the Combined Categories

	Paired Sample Test Results/Statistics
Mean	-17.08333
Standard Deviation	13.61450
Standard Error Mean	0.500000
95% Confidence (Lower)	-21.03657
95% Confidence (Upper)	-13.13009
t-Statistic	-8.693
df	47
p-Value	0.000

Source: Field Study, 2018

Appendix C: Paired Sample Statistics for CA

Table C1

	Mean	N	Standard Deviation	Standard Error Mean
Pair 1				
Score Before Training	60.8750	8	20.62202	7.29099
Score After Training	86.5000	8	14.71637	5.20302

Source: Field Study, 2018

Table C2

Paired Sample t-Test: Summary of Output Results for CA

	Paired Sample Test Results/Statistics
Mean	-25.62500
Standard Deviation	13.55347
Standard Error Mean	4.79187
95% Confidence (Lower)	-36.95598
95% Confidence (Upper)	-14.29402
t-Statistic	-5.348
df	7
p-Value	0.001

Source: Field Study, 2018

Appendix D: Paired Sample Statistics for AD

Table D1

	Mean	N	Standard Deviation	Standard Error Mean
Pair 1				
Score Before Training	76.2353	17	7.10220	1.72254
Score After Training	90.1765	17	8.51642	2.06554

Source: Field Study, 2018

Table D2

Paired Sample *t*-Test: Summary of Output Results for AD

	Paired Sample Test Results/Statistics
Mean	-13.94118
Standard Deviation	10.85398
Standard Error Mean	2.63248
95% Confidence (Lower)	-19.52178
95% Confidence (Upper)	-8.36058
t-Statistic	-5.296
df	18
p-Value	0.000

Source: Field Study, 2018

Appendix E: Paired Sample Statistics for BSN

Table E1

	Mean	N	Standard Deviation	Standard Error Mean
Pair 1				
Score Before Training	75.0000	21	12.22293	2.66726
Score After Training	90.4762	21	7.42037	1.61926

Source: Field Study, 2018

Table E2

Paired Sample *t*-Test: Summary of Output Results for BSN

	Paired Sample Test Results/Statistics
Mean	-15.47619
Standard Deviation	15.09510
Standard Error Mean	3.29402
95% Confidence (Lower)	-22.34740
95% Confidence (Upper)	-8.60499
t-Statistic	-4.698
df	20
p-Value	0.000

Source: Field Study, 2018

Appendix F: Paired Sample Statistics for MSN

Table F1

	Mean	N	Standard Deviation	Standard Error Mean
Pair 1				
Score Before Training	70.0000	2	4.24264	3.00000
Score After Training	96.5000	2	4.94975	3.50000

Source: Field Study, 2018

Table F2

Paired Sample *t*-Test: Summary of Output Results for MSN

	Paired Sample Test Results/Statistics
Mean	-26.50000
Standard Deviation	0.70711
Standard Error Mean	0.500000
95% Confidence (Lower)	-32.85310
95% Confidence (Upper)	-20.14690
t-Statistic	-53.000
df	1
p-Value	0.012

Source: Field Study, 2018

Appendix G: Pre-Test for Promoting Infant Safe Sleep Through Staff Education

Please select your status

CA____ RN AD____ RN MSN____ RN BSN____

This test is designed to measure baseline knowledge about Sudden Infant Death Syndrome (SIDS)and other sleep-related causes of infant death, risk-reduction recommendations for sleep-related infant deaths, and how to continue to communicate the recommendations to parents and caregivers. Some questions may have more than one correct answer. The questions cover the major content areas of this continuing education (CE) activity; however, the pre-test is not scored for CE credit.

1. Nursing staff who care for newborn infants are an important role model for parents and reducing sleep-related infant death and sudden unexpected infant death (SUID) by:

   A. placing infants to sleep supine, elevated hard mattress, and swaddled tightly.
   B. Using safe sleep practices, educating parents and caregivers only on SIDS, and video on safe sleep.
   C. Adopting evidence-based staff education initiative on infant safe sleep practices (SSP), promote model, and educate caregivers on adherence to infant SSP.
   D. All of the above.

2. What is the definition and causes of SUID?

A. Death of an infant 1 year of age, SIDS, and from a known cause of sleep related-infant death.

B. Death of an infant younger than 1year of age, “diagnosis of exclusion”, only a medical examiner or coroner can diagnose.

C. Sudden, no immediately obvious cause, and those known from a cause, such as other sleep-related infant deaths.

D. Linked to where the baby sleeps or slept, accidental causes, do not fall into the SIDS category.

3.Which of the following statements about SIDS is true?

A. SIDS is the leading cause of death of infants between 1 month and 1 year of age.

B. SIDS is completely preventable.

C. Most Infants seem sick before they die.

D. SIDS is caused by immunizations.

4.Which of the following statements is NOT a recommendation for reducing the risk of SIDS and other sleep-related causes of infant death?

A. Do not smoke around infants

B. Place infants on their backs

C. Keep sleep area free of soft bedding, crib bumpers, and stuffed toys.

D. Keep infants warm by wrapping tightly with blankets.

5.Among parents and caregivers, common reasons for not following the back-sleeping recommendations include:

A. Fear of aspiration or choking

B. Relatives recommending the prone position

C. Concern about a flattened skull (positional plagiocephaly).

D. All of the above

6. When a baby is in the back-sleeping position, circle ALL except on that does not apply:

A. Trachea is on the bottom, anything regurgitated or refluxed will pool at the opening of the trachea, easy for baby to aspirate.

B. Baby does not sleep as deeply, which helps protect infants from SIDS.

C. Trachea is on the top, anything regurgitated or refluxed from the esophagus must work against gravity to be aspirated into the trachea.

D. Babies may actually clear secretions better.

7. When a baby is lying face down SIDS pathogenesis may occur which is

A. Asphyxia, arousal, hypoxic coma, tachycardia and gasping, failure

B. Asphyxia, failure to arouse, hypoxic coma, bradycardia, deep breathing, resuscitation, death.

C. Asphyxia, head lifting or turning, breathing, avoidance of an environmental threat.

D. Asphyxia, and brain hypoperfusion, failure to arouse, hypoxic coma, bradycardia, gasping, and failure of autoresuscitation resulting in death

8. Current SIDS research suggests that a convergence of factors may lead to SIDS death. The theory is called:

A. Vulnerable infant model

B. Critical development theory

C. Triple-risk model

D. Double-risk theory

9. Since the initial release of the risk-reduction guidelines by the American Academy of Pediatrics Task Force on Infant Sleep Position in 1992, the SIDS rate in the United States has decreased by:

A. 15%

B. 30%

C. 60%

D. 70%

10. U.S. rates for SIDS and other sleep-related causes of infant death remains disproportionately high in which of the following ethnic groups?

A. African American

B. American Indians/Alaska Natives

C. Hispanics

D. Both A and B

11. Which of the following constitutes a safe sleep environment for an infant?

A. Soft sleeping surfaces.

B. A firm mattress from a secondhand crib (1975) with stuffed toys surrounding the perimeter.

C. A firm mattress in a safety-approved portable sleep area, with loose bedding, such as quilts and comforters.

D. A firm and flat mattress in a safety-approved crib, free of loose bedding, crib bumpers, and stuffed toys.

12. Research shows that parents are more likely to follow recommendations to reduce the risk of SIDS and other sleep-related cause of infant death when they:

A. Receive specific advice from healthcare providers.

B. Observe the nursing staff placing the infant on his or her back to sleep

C. Receive SIDS incidence statistics

D. Both A and B

13. When nurse speak to parents and caregivers about SIDS and other sleep-related causes of infant death, it is important that their messages:

A. Be detailed

B. Include statistics

C. Be clear and simple

D. Include medical terminology

14. Birth hospitals are responsible for education, training, and role modeling on infant safe sleep practices and outcomes of infant sleep-related deaths in the hospital and community are now being charged to the hospitals as:

A. A Safety Occurrence

B. Sentinel Event

C. Neonatal event

D. Homicide

15. The appropriate time to deliver recommendations to parents and caregivers about reducing the risk of SIDS and other sleep-related infant deaths is:

A. Within the first 24 hours of delivery

B. During pregnancy

C. At well-baby visits

D. All of the above

Appendix H: Post-Test for Promoting Infant Safe Sleep Through Staff Education

Please select your status.

CA____ RN AD____ RN MSN___ RN BSN____

This test is designed to measure what you have learned through this staff educational initiative activity. Please select the best answer to the question.

1.Nursing staff who care for newborn infants are an important role model for parents and reducing sleep-related infant death and sudden unexpected infant death (SUID) by:

A. Consistently placing infants to sleep supine, elevated hard mattress, and swaddled tightly.
B. Using safe sleep practices, educating parents and caregivers only on SIDS, and video on safe sleep.
C. Adopting evidence-based staff education initiative on infant safe sleep practices (SSP), promote model, and educate caregivers on adherence to infant SSP.
D. All of the above.

2. What is the definition and causes of SUID?

E. Death of an infant 1 year of age, SIDS, and from a known cause of sleep related-infant death.
F. Death of an infant younger than 1year of age, “diagnosis of exclusion”, only a medical examiner or coroner can diagnose.

G. Sudden, no immediately obvious cause, and those known from a cause, such as other sleep-related infant deaths.

H. Linked to where the baby sleeps or slept, accidental causes, do not fall into the SIDS category.

3.Which of the following statements about SIDS is true?

E. SIDS is the leading cause of death of infants between 1 month and 1 year of age.

F. SIDS is completely preventable.

G. Most Infants seem sick before they die.

H. SIDS is caused by immunization

4.Which of the following statements is NOT a recommendation for reducing the risk of SIDS and other sleep-related causes of infant death?

A. Do not smoke around infants

B. Place infants on their backs

C. Keep sleep area free of soft bedding, crib bumpers, and stuffed toys.

D. Keep infants warm by wrapping tightly with blankets.

5.Among parents and caregivers, common reasons for not following the back-sleeping recommendations include:

D. Fear of aspiration or choking

E. Relatives recommending the prone position

F. Concern about a flattened skull (positional plagiocephaly).

D. All of the above

6. When a baby is in the back-sleeping position, circle ALL except on that does not apply:

A. Trachea is on the bottom, anything regurgitated or refluxed will pool at the opening of the trachea, easy for baby to aspirate.

B. Baby does not sleep as deeply, which helps protect infants from SIDS.

C. Trachea is on the top, anything regurgitated or refluxed from the esophagus must work against gravity to be aspirated into the trachea.

D. Babies may actually clear secretions better.

7. When a baby is lying face down SIDS pathogenesis may occur which is

A. Asphyxia, arousal, hypoxic coma, tachycardia and gasping, failure

B. Asphyxia, failure to arouse, hypoxic coma, bradycardia, deep breathing, resuscitation, death.

C. Asphyxia, head lifting or turning, breathing, avoidance of an environmental threat.

D. Asphyxia, and brain hypoperfusion, failure to arouse, hypoxic coma, bradycardia, gasping, and failure of autoresuscitation resulting in death

8. Current SIDS research suggests that a convergence of factors may lead to SIDS death. The theory is called:

A. Vulnerable infant model

B. Critical development theory

C. Triple-risk model

D. Double-risk theory

9. Since the initial release of the risk-reduction guidelines by the American Academy of Pediatrics Task Force on Infant Sleep Position in 1992, the SIDS rate in the United States has decreased by:

A. 15%

B. 30%

C. 60%

D. 70%

10. U.S. rates for SIDS and other sleep-related causes of infant death remain disproportionately high in which of the following ethnic groups?

A. African American

B. American Indians/Alaska Natives

C. Hispanics

D. Both A and B

11. Which of the following constitutes a safe sleep environment for an infant?

A. Soft sleeping surfaces.

B. A firm mattress from a secondhand crib (1975) with stuffed toys surrounding the perimeter.

C. A firm mattress in a safety-approved portable sleep area, with loose bedding, such as quilts and comforters.

D. A firm and flat mattress in a safety-approved crib, free of loose bedding crib bumpers, and stuffed toys.

12. Research shows that parents are more likely to follow recommendations to reduce the risk of SIDS and other sleep-related cause of infant death when they:

A. Receive specific advice from healthcare providers.

B. Observe the nursing staff placing the infant on his or her back to sleep

C. Receive SIDS incidence statistics

D. Both A and B

13. When nurse speak to parents and caregivers about SIDS and other sleep-related causes of infant death, it is important that their messages:

A. Be detailed

B. Include statistics

C. Be clear and simple

D. Include medical terminology

14. Birth hospitals are responsible for education, training, and role modeling on infant safe sleep practices and outcomes of infant sleep-related deaths in the hospital and community are now being charged to the hospitals as:

A. A Safety Occurrence

B. Sentinel Event

C. Neonatal event

D. Homicide

15. The appropriate time to deliver recommendations to parents and caregivers about reducing the risk of SIDS and other sleep-related infant deaths is:

A. Within the first 24 hours of delivery

B. During pregnancy

C. At well-baby visits

D. All of the above

Appendix I: Answer Key

1. Nursing staff who care for newborn infants are an important role model for parents and reducing sleep-related infant death and sudden unexpected infant death (SUID) by:

   A. Consistently placing infants to sleep supine, elevated hard mattress, and swaddled tightly.

   B. Using safe sleep practices, educating parents and caregivers only on SIDS, and video on safe sleep.

   C. Adopting evidence-based staff education initiative on infant safe sleep practices (SSP), promote model, and educate caregivers on adherence to infant SSP.

   D. All of the above.

2. What is the definition and causes of SUID?

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A. 15%

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about reducing the risk of SIDS and other sleep-related infant deaths is:

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C. At well-baby visits

D. All of the above